AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for providing a delay guarantee for each of a plurality of client devices associated with an access point, comprising:

classifying each of said plurality of client devices into one of a plurality of client device types based on, at least, a measurement of current and previous traffic loads for each of said plurality of client devices, and a determination of whether said client device is critical;

determining a desired traffic load for said access point;

determining a traffic intensity p for each of said plurality of client devices, below which the access time delay guarantee will be assured with probability of 1 - P_{loss} for each of said plurality of client devices where said traffic intensity p is determined using the relationship of :

$$P_{loss} = (1-p)p^{K}/(1-p^{K+1})$$

where packet loss probability P_{loss} is a probability of violating an access delay time guarantee and a buffer size K is a buffer size representative of a maximum number of retransmissions a client device can try before violating the delay guarantee; and

allocating shaper intervals to each of said plurality of client devices based on said client device type classification of each of said plurality of client devices, [[and]] said desired traffic load of said access point, and a maximum of said determined traffic intensity p for each of said plurality of client devices wherein said classifying, determining, and allocating are performed by said access point.

2. (Original) The method of claim 1, wherein said client device types include critical compliant, critical non-compliant, non-critical satisfied, non-critical regulated, and non-critical non-responsive.

3. (Previously Presented) The method of claim 2, wherein said allocating shaper intervals to each of said plurality of client devices based on said client device type classification and said desired traffic load includes allocating a shaper interval of zero to a client device classified as critical compliant.

4. (Previously Presented) The method of claim 3, wherein said allocating shaper intervals to each of said plurality of client devices based on said client device type classification and said desired traffic load includes allocating a shaper interval of zero to a client device classified as critical non-compliant if no traffic overload exists for said access point.

5. (Previously Presented) The method of claim 3, wherein said allocating shaper intervals to each of said plurality of client devices based on said client device type classification and said desired traffic load includes allocating a non-zero shaper interval to a client device in said plurality of client devices classified as critical non-compliant when a traffic overload exists for said access point and said plurality of client devices includes at least one client device classified as critical compliant.

6. (Original) The method of claim 1, further comprising:

disassociating at least one of said plurality of client devices from said access point if a traffic overload exists for said access point.

7. (Original) The method of claim 1, wherein said determining a desired traffic load for said plurality of client devices includes determining a maxMeanAccessTime value associated with said plurality of client devices.

8. (Original) The method of claim 7, wherein said determining a desired traffic load for said plurality of client devices includes determining an access delay time for a first of said plurality of client devices.

9. (Original) The method of claim 7, wherein said determining a desired traffic load for said plurality of client devices includes determining a targetInterFrameSpace value associated with said plurality of client devices.

10. (Original) The method of claim 1, further comprising:

allocating bandwidth to each of said plurality of client devices.

11. (Original) The method of claim 10, wherein said allocating bandwidth to each of said plurality of client devices includes determining a target frame rate and shaper interval for a first client device in said of said plurality of client devices based on a guarantee delay time associated with said first client device and a maxMeanAccessDelay value associated with said plurality of client devices.

12. (Previously Presented) The method of claim 1, further comprising:

determining a reference time for a first client device in one of said plurality of client devices based on a shaper interval associated with said first client device.

13. (Original) The method of claim 1, wherein said allocating shaper intervals to each of said plurality of client devices based on client device type classification and said desired traffic load includes allocating a shaper interval to a first client device in said plurality of client devices such that said first client device's interframe interval is larger than said shaper interval.

14. (Original) The method of claim 1, further comprising:

determining a guarantee delay value for a first of said plurality of client devices.

15. (Original) The method of claim 1, further comprising:

receiving a request for new bandwidth.

16. (Original) The method of claim 15, further comprising:

determining bandwidth consumption for at least some of said plurality of client devices.

17. (Original) The method of claim 16, further comprising:

determining if said new bandwidth will create overload for said access point.

18. (Previously Presented) The method of claim 1, wherein said access point performs:

said classifying each of said plurality of client devices into one of a plurality of potential client device types;

said determining a desired traffic load for said plurality of client devices; and

said allocating shaper intervals to each of said plurality of client devices based on said client device type classification and said desired traffic load.

19. (Cancel)

20. (Currently Amended) An article of manufacture comprising:

a computer readable medium having stored thereon instructions which, when executed by a processor, cause said processor to:

classify each of a plurality of client devices into one of a plurality of client device types based on, at least, a measurement of current and previous traffic loads for each of said plurality of client devices, and a determination of whether said client device is critical;

determine a desired traffic load for said access point;

determine a traffic intensity p for each of said plurality of client devices, below which the access time delay guarantee will be assured with probability of 1 - P_{loss} for each of said plurality of client devices where said traffic intensity p is determined using the relationship of :

$$P_{loss} = (1-p)p^{K}/(1-p^{K+1})$$

where packet loss probability P_{loss} is a probability of violating an access delay time guarantee and a buffer size K is a buffer size representative of a maximum number of retransmissions a client device can try before violating the delay guarantee; and

allocate shaper intervals to each of said plurality of client devices based on said client device type classification of each of said plurality of client devices, [[and]] said desired traffic load of said access point, and a maximum of said determined traffic intensity p for each of said plurality of client devices, wherein said classifying, determining, and allocating are performed by said access point.

21. (Currently Amended) An apparatus, comprising:

a processor;

a communication port coupled to said processor and adapted to communicate with at least one device; and

a storage device coupled to said processor and storing instructions adapted to

be executed by said processor to:

classify each of a plurality of client devices into one of a plurality of client device types based on, at least, a measurement of current and previous traffic loads for each of said plurality of client devices, and a determination of whether said client device is critical;

determine a desired traffic load for said access point;

determine a traffic intensity p for each of said plurality of client devices, below which the access time delay guarantee will be assured with probability of 1 - P_{loss} for each of said plurality of client devices where said traffic intensity p is determined using the relationship of :

$$P_{loss} = (1-p)p^{K}/(1-p^{K+1})$$

where packet loss probability P_{loss} is a probability of violating an access delay time guarantee and a buffer size K is a buffer size representative of a maximum number of retransmissions a client device can try before violating the delay guarantee; and

allocate shaper intervals to each of said plurality of client devices based on said client device type classification of each of said plurality of client devices, [[and]] said desired traffic load of said access point, and a maximum of said determined traffic intensity p for each of said plurality of client devices, wherein said classifying, determining, and allocating are performed by said access point.